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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,142

09/25/2003

Roger Graham Byford

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WOOD, HERRON & EVANS, LLP
2700 CAREW TOWER
441 VINE STREET
CINCINNATI, OH 45202

EXAMINER

ARMSTRONG, ANGELA A

ART UNIT

PAPER NUMBER

2626

MAIL DATE

DELIVERY MODE

04/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/671,142	Applicant(s) BYFORD, ROGER GRAHAM	
	Examiner ANGELA A. ARMSTRONG	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-9,11,12,14,17-22,24-27,29,31-34,36,37,40-44,47-55 and 57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-9, 11-12, 14, 17-22, 24-27, 29, 31-34, 36-37, 40-44, 47-55, and 57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 19, 2008, has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-9, 11-12, 14, 17-22, 24-27, 29, 31-34, 36-37, 40-44, 47-55, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burnett et al (US Patent Application Publication 2003/0228023 A1) in view of Hughes (US Patent No. 6,453,020).

4. Regarding claim 1, Burnett discloses an apparatus for detecting user speech (Abstract) comprising: a first microphone (19) and at least a second microphone (13) each operable to generate audio signals in response to sounds (paragraphs 39 and 46); the first microphone operable to capture a greater proportion of speech sounds from a user than the second microphone (paragraphs 39 and 46); processing circuitry operable to process the audio signals and to compare characteristics of the audio signals to a baseline (paragraphs 43, 51-52, 87-136,

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142-162; element 106); speech recognition circuitry for further processing the audio signals and recognizing user speech in the audio signals (paragraphs 40, 43, 54-56). Burnett fails to specifically teach the processing circuitry configured for selectively forwarding the audio signals from the first microphone to the speech recognition circuitry for further processing only when the audio signals vary from the baseline more than a threshold amount, thus indicating that the user is speaking, but not forwarding the audio signals from the first microphone to the speech recognition circuitry and not completing the further speech recognition processing when user speech is not detected. However, it was well known in the art of speech and signal processing to implement a VAD in a system with a speech recognizer to provide an indication of speech presence from a received input signal and to compare the extracted signal values with certain selected thresholds, such that the voice-active decision is made if the measured values exceed the thresholds, and thus a signal which is determined to be voice/speech is selectively forwarded for further speech processing and a signal which is determined to be a non-speech signal is not forwarded and additional speech processing is not initiated. Hughes discloses a voice processing system, which provides a barge-in facility for the recognition resource on the remote server, whereby a prompt is played out to the user, and the incoming telephony signal is fed into a voice activity detector on the digital trunk processor. Responsive to a detection of incoming voice activity, the outgoing prompt is terminated, and the incoming data is transferred over the local area network to the remote server for recognition. Hughes specifically teaches the system avoids processing incoming voice signals other than VAD processing until it is known that something of interest has been received (col. 11, line 62 to col. 12, line 2). Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of

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Burnett to implement selectively forwarding audio signals only when the user is speaking and not forwarding audio signals when user speech is not detected, as taught by Hughes, for the purpose of only processing incoming signals when the user is actually speaking, so as to not waste processing resources.

Regarding claim 4, the combination of Burnett and Hughes teaches the first microphone is located relative to the second microphone to capture a greater proportion of speech sounds of a user (paragraphs 54-86).

Regarding claim 5, the combination of Burnett and Hughes teaches a headset (paragraphs 49,50) to be worn by a user and housing the first and second microphones (paragraphs 163,165).

Regarding claim 6, the combination of Burnett and Hughes teaches the first microphone is positioned in the headset to be closer to a mouth of the user than the second microphone when the headset is worn (paragraphs 54-86).

Regarding claim 7, the combination of Burnett and Hughes teaches the processing circuitry processes signal levels of the audio signals to compare to a baseline (paragraphs 43, 51, 88; element 106).

Regarding claim 8, the combination of Burnett and Hughes teaches the signal characteristics include at least one of energy level characteristics, frequency characteristics, amplitude characteristics and phase characteristics (paragraphs 39, 43, 54-86).

Regarding claim 9, the combination of Burnett and Hughes teaches processing circuitry operable for initially determining a variation between signal characteristics of the audio signals when the user is not speaking and then using that variation as a baseline (paragraphs 43, 51, 88; element 106).

Regarding claim 11, the combination of Burnett and Hughes teaches the second microphone is an omni directional microphone (paragraphs 43, 51, 88).

Regarding claim 12, the combination of Burnett and Hughes teaches discloses Mel scale filters, the processing circuitry operable to use outputs of the Mel scale filters for comparing the audio signals to a baseline (paragraphs 39, 43, 51, 88).

Regarding claims 14, 17-22, 24-27, 29, 31-34, 36-37, 40-44, 47-55, and 57; claims 14, 17-22, 24-27, 29, 31-34, 36-37, 40-44, 47-55, and 57 are similar in scope and content to claims 1, 4-9, 11-12, and are rejected under similar rationale.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 4-9, 11-12, 14, 17-22, 24-27, 29, 31-34, 36-37, 40-44, 47-55, and 57 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA A. ARMSTRONG whose telephone number is (571)272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick N. Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Angela A Armstrong/
Primary Examiner, Art Unit 2626